

aircraft engines

BT aerospace engines
 RT aerospace propulsion
 aircraft
 blades
 combustion
 compressors
 gas turbines
 hypersonic vehicles
 jet engines
 PT aerospace engines
 CC A8620C Aerospace transportation (energy utilisation)
 B7640R Aircraft propulsion
 E2320 Engines
 E3650C Aerospace industry
 DI January 2024

atom probe tomography

BT atom probe field ion microscopy
 tomography
 PT atom probe field ion microscopy
 tomography
 CC A0780 Electron and ion microscopes and techniques
 DI January 2024

automotive computing

UF automotive software
 BT automotive engineering
 RT advanced driver assistance systems
 automobiles
 automotive components
 automotive control
 automotive electric vehicles
 automotive electrics
 automotive electronics
 automotive materials
 driver information systems
 intelligent transportation systems
 mechanical engineering computing
 road traffic
 road vehicle radar
 traffic engineering computing
 PT automotive engineering
 CC B8520B Automobile electronics and electrics
 C7440 Civil and mechanical engineering computing
 C7475 Automotive computing
 E0410H Mechanical engineering applications of IT
 E3650A Automobile industry
 DI January 2024

carbon emissions trading *[promoted LI]*

BT environmental economics
 RT environmental management
 pollution
 recycling
 PT environmental economics
 CC A8605 Energy and environmental policy, economics and legislation
 B0140 Administration and management
 B0170Q Environmental factors
 C0130 Economic, social and political aspects of control
 C0150 Environmental aspects of control and robotics
 C0230 Economic, social and political aspects of computing
 C0250 Environmental aspects of computing
 C1290B Systems theory applications in natural resources and ecology
 C1290D Systems theory applications in economics and business
 E0220 Economics
 E0230 Environmental issues
 E1540 Systems theory applications
 DI January 2024

carbon nanofibres

UF carbon nanofibers
 BT carbon fibres
 nanofibres
 RT carbon fibre reinforced composites
 carbon fibre reinforced plastics
 nanocomposites
 PT carbon fibres
 nanofibres
 CC A7315N Electronic structure of graphene and graphene-related materials (thin films, low dimensional and nanoscale structures)
 A7360T Electrical properties of graphene and graphene-related materials (thin films, low-dimensional and nanoscale structures)
 A7550K Amorphous and nanostructured magnetic materials
 A7570B Magnetic properties of nanostructures
 A7865V Optical properties of graphene and graphene related materials (thin films, low-dimensional and nanoscale structures)
 A8100 Materials science
 A8116 Methods of nanofabrication and processing
 E1710 Engineering materials
 DI January 2024

chitosan

- BT polymers
- RT biological tissues
biomedical materials
- PT polymers
- CC A3620 Macromolecules and polymer molecules
A6140K Structure of polymers, elastomers, and plastics
A8120S Preparation of organic materials, polymers and plastics
A8235 Polymer reactions and polymerization
A8770M Biomedical materials
E1710 Engineering materials
- DI January 2024

circular economy

- BT environmental economics
- RT energy resources
environmental management
natural resources
recycling
sustainable development
waste recovery
waste reduction
- PT environmental economics
- CC A8605 Energy and environmental policy, economics and legislation
C1290B Systems theory applications in natural resources and ecology
C1290D Systems theory applications in economics and business
E0220 Economics
E0230 Environmental issues
E1540 Systems theory applications
- DI January 2024

data science

- BT computer science
data analysis
- RT artificial intelligence
Big Data
computer science education
data handling
data mining
data preparation
deep learning (artificial intelligence)
DP industry
feature extraction
learning (artificial intelligence)
neural nets
pattern classification
personnel
statistical analysis
- PT data handling
- CC A0650 Data handling and computation

- C0200 General computer topics
- C6130 Data handling techniques
- C6210 Knowledge based systems
- C6260 Machine learning (artificial intelligence)
- C6264 Neural nets
- DI January 2024

dynamic mechanical analysis

- BT dynamic testing
- RT glass transition
stress-strain relations
viscoelasticity
- PT dynamic testing
- CC A8172 Destructive materials testing methods
E1630 Testing
- DI January 2024

energy density

- BT energy storage
- RT battery storage plants
capacitor storage
direct energy conversion
electric vehicles
electrochemical electrodes
fuel cell vehicles
hybrid electric vehicles
power capacitors
pulsed power technology
secondary cells
solar powered vehicles
supercapacitors
- PT energy storage
- CC A8640 Energy storage
B8257 Battery energy storage systems
B8400 Direct energy conversion and energy storage
- DI January 2024

ensemble learning *[promoted LI]*

- BT learning (artificial intelligence)
- RT decision trees
feature extraction
image classification
neural nets
pattern classification
regression analysis
supervised learning
support vector machines
unsupervised learning
- PT learning (artificial intelligence)
- CC C1230L Learning in AI (theory)
C6260 Machine learning (artificial intelligence)
- DI January 2024

event triggered control

BT control theory
 RT adaptive control
 closed loop systems
 distributed control
 linear systems
 multi-agent systems
 networked control systems
 nonlinear control systems
 signal sampling
 stability
 time-varying systems
 CC C1340 Specific control systems
 E1550 Control technology and theory (production)
 DI January 2024

explainable AI

UF explainable artificial intelligence
 explainable machine learning
 interpretable AI
 interpretable artificial intelligence
 white-box model (AI)
 XAI
 BT knowledge engineering
 RT decision making
 deep learning (artificial intelligence)
 ethical aspects
 learning (artificial intelligence)
 neural nets
 program testing
 security of data
 social aspects of automation
 software performance evaluation
 PT artificial intelligence
 CC C1230 Artificial intelligence (theory)
 C6210 Knowledge based systems
 DI January 2024

fake news

BT journalism
 RT ethical aspects
 feature extraction
 Internet
 learning (artificial intelligence)
 natural language processing
 politics
 social aspects of automation
 social networking (online)
 socio-economic effects
 text analysis
 Web sites
 CC C0230 Economic, social and political aspects of
 computing
 C7210 Information services and centres
 C7230 Publishing and reproduction

C7240 Information analysis and indexing
 C7820 Humanities computing
 DI January 2024

federated learning

UF collaborative learning (artificial intelligence)
 BT learning (artificial intelligence)
 RT cooperative systems
 data privacy
 deep learning (artificial intelligence)
 Internet of Things
 mobile computing
 security of data
 PT learning (artificial intelligence)
 CC C1230L Learning in AI (theory)
 C6260 Machine learning (artificial intelligence)
 DI January 2024

fractional order systems

UF FOC control
 fractional order control
 TID controllers
 tilt integral derivative controllers
 BT control systems
 RT chaos
 differential equations
 three-term control
 transfer functions
 PT control systems
 CC C1340 Specific control systems
 E1550 Control technology and theory (production)
 DI January 2024

hydrogen evolution reactions

BT chemical reactions
 hydrogen production
 NT water splitting
 RT electrolysis
 hydrogen
 hydrogen storage
 oxygen evolution reactions
 reduction (chemical)
 water
 PT hydrogen production
 CC A8230 Specific chemical reactions; reaction
 mechanisms
 A8245B Electrocatalysis
 A8610C Hydrogen fuel
 A8640K Hydrogen storage and technology
 E1525 Industrial processes
 E3624 Fuel processing industry
 E3626 Chemical industry
 DI January 2024

hydrogen fuel cells

BT fuel cells
 RT flow batteries
 fuel cell power plants
 fuel cell vehicles
 fuel gasification
 hydrogen production
 microreactors
 steam reforming
 PT fuel cells
 CC A8630G Fuel cells
 B8410G Fuel cells
 DI January 2024

inductively coupled plasma mass spectrometry

UF ICP-MS
 BT mass spectroscopy
 RT geochemistry
 geochronology
 mass spectroscopic chemical analysis
 minerals
 plasma applications
 rocks
 PT mass spectroscopy
 CC A0755 Magnetic instruments and techniques
 A5275 Plasma devices and applications
 A8280M Mass spectrometry (chemical analysis)
 DI January 2024

industrial communication

BT telecommunication
 RT factory automation
 industrial control
 Internet of Things
 local area networks
 production engineering computing
 radio networks
 wireless LAN
 CC B6210 Telecommunication applications
 B6250 Radio links and equipment
 C5620 Computer networks and techniques
 E0430 Information resources and networks
 DI January 2024

k-means algorithms

UF k-means clustering algorithms
 BT pattern clustering
 RT data analysis
 data mining
 feature extraction
 learning (artificial intelligence)
 nearest neighbour methods
 pattern classification
 unsupervised learning
 vector quantisation

PT pattern clustering
 CC A4230S Pattern recognition
 C1250 Pattern recognition
 C6130 Data handling techniques
 C6260 Machine learning (artificial intelligence)
 C6262 Unsupervised learning
 DI January 2024

laser scanning confocal microscopes *[promoted LI]*

BT optical microscopes
 RT optical microscopy
 PT optical microscopes
 CC A0760P Optical microscopy
 A0779 Scanning probe microscopy and related techniques
 DI January 2024

laser scanning confocal microscopy *[promoted LI]*

BT optical microscopy
 RT biomedical materials
 cellular biophysics
 optical microscopes
 PT optical microscopy
 CC A0760P Optical microscopy
 A0779 Scanning probe microscopy and related techniques
 DI January 2024

mechanical engineering education

BT engineering education
 mechanical engineering
 RT computer aided instruction
 educational courses
 STEM
 teaching
 training
 PT engineering education
 mechanical engineering
 CC E0250 Education and training
 E2000 Engineering mechanics
 DI January 2024

mechanical impedance control *[promoted LI]*

UF impedance control (mechanical)
 BT force control
 position control
 RT manipulator dynamics
 manipulator kinematics
 motion control
 robot dynamics
 robot kinematics
 robots
 PT force control
 position control
 CC C3120C Spatial variables control

C3120F Mechanical variables control
 E1550 Control technology and theory (production)
 E2230 Robot and manipulator mechanics
 DI January 2024

mental health

UF anxiety (psychology)
 depression (psychology)
 stress (psychology)
 BT psychology
 RT brain
 cognition
 employee welfare
 health care
 human factors
 medical disorders
 neurophysiology
 occupational health
 occupational stress
 patient diagnosis
 personnel
 social aspects of automation
 social networking (online)
 socio-economic effects
 PT psychology
 DI January 2024

mergers (astronomical)

NT mergers (stars)
 RT black holes
 galaxies
 gravitational wave sources (astronomical)
 CC A9760L Black holes
 A9850R Active and peculiar galaxies
 A9870T Cosmic gravitational wave sources
 DI January 2024

microporous materials

BT porous materials
 RT flow through porous media
 mesoporous materials
 porosity
 porous semiconductors
 PT porous materials
 CC A4755M Flow through porous media
 A6140G Structure of powders and porous materials
 A8100 Materials science
 B0580 Powders and porous materials (engineering materials science)
 DI January 2024

model predictive control

UF MPC (control)
 BT predictive control

RT nonlinear control systems
 optimal control
 process control
 PT predictive control
 CC C1330 Optimal control
 E1550 Control technology and theory (production)
 DI January 2024

nanosheets

BT nanostructured materials
 RT nanocomposites
 nanofibres
 nanoparticles
 PT nanostructured materials
 CC A6146 Structure of solid clusters, nanoparticles, nanotubes and nanostructured materials
 A6322 Phonons in low-dimensional structures and small particles
 A7315 Electronic structure: density of states and band structure (thin films, low-dimensional and nanoscale structures)
 A7360 Electrical properties of thin films, low-dimensional and nanoscale structures
 A7550K Amorphous and nanostructured magnetic materials
 A7570B Magnetic properties of nanostructures
 A7865 Optical properties of thin films, low-dimensional and nanoscale structures
 A8116 Methods of nanofabrication and processing
 E1710 Engineering materials
 DI January 2024

network slicing

BT telecommunication network management
 RT 5G mobile communication
 bandwidth allocation
 quality of service
 resource allocation
 telecommunication computing
 virtualisation
 PT telecommunication network management
 CC B6210C Network management
 B6250F Mobile radio systems
 DI January 2024

optical transmittance

BT optical constants
 RT light transmission
 optical materials
 PT light transmission
 CC A4270 Optical materials
 A7820D Optical constants and parameters (condensed matter)
 b4110 Optical materials
 DI January 2024

photoanodes

- BT anodes
photoemissive devices
- RT photoelectricity
photoemission
- PT anodes
photoemissive devices
- CC a8245 Electrochemistry and electrophoresis
b2300 Electron tubes
b2320 Electron emission, materials and cathodes
b2370 Phototubes
b8410 Electrochemical conversion and storage
- DI January 2024

point clouds

- BT computer graphics
- RT CAD
computational geometry
data visualisation
feature extraction
optical radar
solid modelling
- PT computer graphics
- CC C6130B Graphics techniques
- DI January 2024

Q-learning

- BT reinforcement learning
- RT Markov processes
mobile robots
multi-agent systems
optimisation
stochastic processes
- PT reinforcement learning
- CC C1230L Learning in AI (theory)
C6263 Reinforcement learning
- DI January 2024

reconfigurable intelligent surfaces

- UF intelligent reflecting surfaces
IRS (intelligent reconfigurable surfaces)
IRS (intelligent reflecting surfaces)
reconfigurable intelligent structures
- RT free-space optical communication
frequency selective surfaces
intelligent materials
metamaterial antennas
MIMO communication
optical metasurfaces
radiocommunication
terahertz metamaterials
wireless channels

- CC B1305M Metamaterials and structures (microwave)
B5205 Artificial electromagnetic wave materials and structures
- DI January 2024

semiconductor nanowires *[promoted LI]*

- BT nanowires
- RT semiconductor materials
semiconductor quantum wires
- PT nanowires
semiconductor quantum wires
- CC A6146 Structure of solid clusters, nanoparticles, nanotubes and nanostructured materials
A6322 Phonons in low-dimensional structures and small particles
A6865 Low-dimensional structures: growth, structure and nonelectronic properties
A7315 Electronic structure: density of states and band structure (thin films, low-dimensional and nanoscale structures)
A7360 Electrical properties of thin films, low-dimensional and nanoscale structures
A7550B Ferromagnetism of Fe and its alloys
A7550K Amorphous and nanostructured magnetic materials
A7865 Optical properties of thin films, low-dimensional and nanoscale structures
A8116 Methods of nanofabrication and processing
B2530C Semiconductor superlattices, quantum wells and related structures
B2550N Nanometre-scale semiconductor fabrication technology
- DI January 2024

soil moisture

- BT moisture
soil
- RT agriculture
crops
groundwater
hydrology
irrigation
vegetation
- PT soil
- CC A9240L Soil moisture
- DI January 2024

thermal gravimetric analysis

- UF TGA
- BT thermal analysis
- RT heat treatment
- PT thermal analysis
- CC A0720 Thermal instruments and techniques

A6400 Equations of state, phase equilibria, and phase transitions
A8100 Materials science
DI January 2024

transfer learning (artificial intelligence) *[promoted LI]*

UF domain adaptation (AI)
BT learning (artificial intelligence)
RT convolutional neural nets
deep learning (artificial intelligence)
feature extraction
image classification
medical image processing
pattern classification
PT learning (artificial intelligence)
CC C1230L Learning in AI (theory)
C6260 Machine learning (artificial intelligence)
DI January 2024

unmanned ground vehicles

UF AGV (autonomous ground vehicles)
autonomous ground vehicles
autonomous land vehicles
autonomous road vehicles
UGV
BT mobile robots
remotely operated vehicles
RT agricultural robots
automatic guided vehicles
automobiles
crops
emergency management
industrial robots
military robotics
military vehicles
off-road vehicles
path planning
planetary rovers
rescue robots
road vehicles
telerobotics
tracked vehicles
CC C3360B Road-traffic system control
C3360F Control of other land traffic systems
C3390C Mobile robots
C3390T Telerobotics
E1550A Robotics
E2230 Robot and manipulator mechanics
DI January 2024

visible light radiation effects

BT radiation effects
RT laser beam effects
PT laser beam effects
radiation effects
CC A6180B Ultraviolet, visible and infrared radiation effects
DI January 2024